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Thermo RIIDEye-X-GN



Smiths Detection Radseeker CS



Symetrix Verifinder-SN23



NSDD Partnership

Working Together to Prevent Nuclear Trafficking
The Office of Nuclear Smuggling Detection and Deterrence



BNC SAM 950-GN-N30



Radiation Solutions Inc. SR-10



Ortec Detective X



NucTech RM0100NH



Aspect MKC A03



AtomTex AT6102



Ortec RadEagle-3SG-H



Testing and Evaluation

NSDD RID Test, Design, and Relevance

Polimaster PM1410



FLIR identiFINDER R500-NG



FLIR identiFINDER R400-NG



AISeSense Gamma 4



Jennifer Erchinger, NEN-3, LANL

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Roadmap

- Overview of testing types
- Relevance to current initiatives
- Overview of NSDD Radioisotope Identification Device (RID) Test

Purposes of Testing & Evaluation

- Objective assessment of technology
- Assure acceptable performance
- Inform cost-effective decisions
- Build collective confidence
- Identify weaknesses or vulnerabilities (a good thing)

Types of Testing and Evaluation (T&E)

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Defining Criteria (Example)

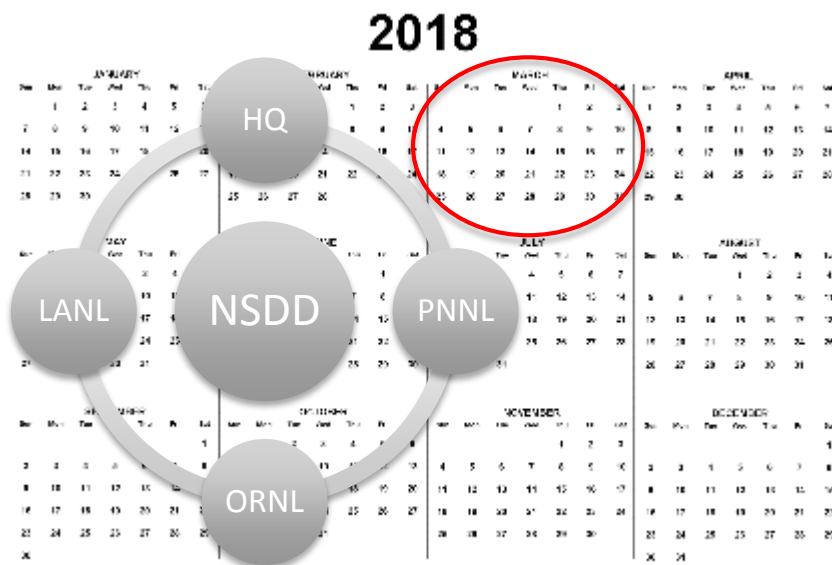
- Probability of Identification (ID)
 - Operational Success
 - Technical Success
 - Failure
- Probability of False Identification (ID)
 - Success vs. Failure
 - Background Contribution
 - NORM Contribution in Masking

Overview of NSDD RID Test

- Baseline Performance Survey of RIDs
- Collect Data for
 - Modeling
 - Performance Characterization
- Meet Objectives within Limitations

Logistics of NSDD RID Test

- Various RID systems
- 4 weeks of testing
- 11 people; 4 institutions
- 4 Scenarios probing different characteristics



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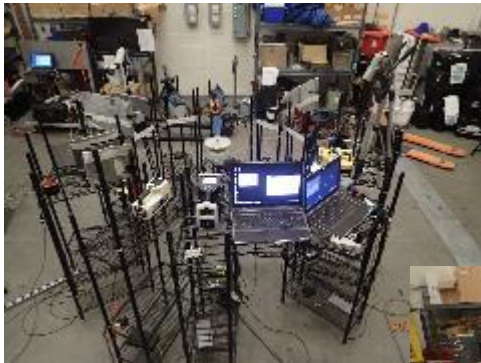


AISeSense Gamma 4



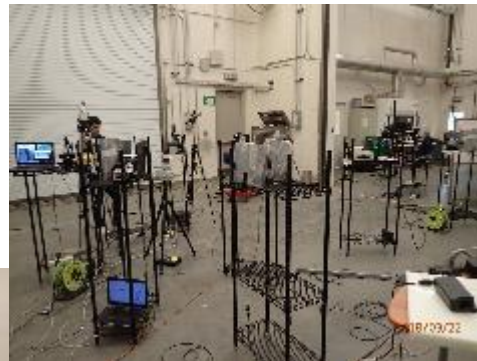
Test Scenarios for NSDD RID Test

- A: Modeling Characterization Measurements
- B: Probability of False ID in Background
- C: Performance Characterization in Low-NORM (Naturally Occurring Radioactive Material) Fields



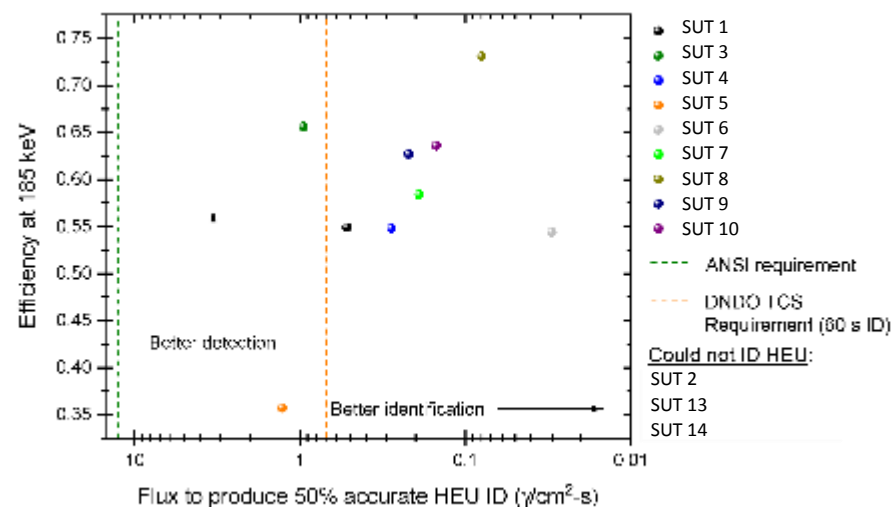
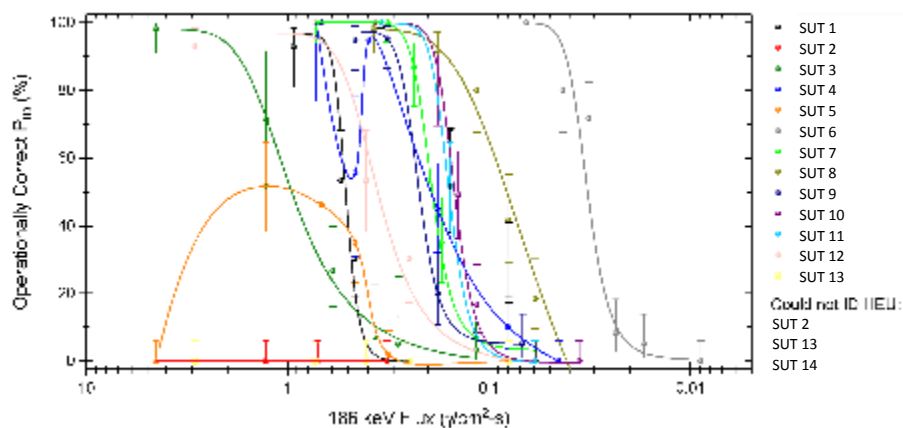
Test Scenarios for NSDD RID Test

- A: Modeling Characterization Measurements
- B: Probability of False ID in Background
- C: Performance Characterization in Low-NORM Fields
- D: Probability of ID
 - As a function of Flux
 - As a function of ID Time



“Quick Look” at NSDD RID Test

- 25 Test Cases Run, >8600 Total Trials for each of 14 RIDs
- Challenges and Lessons Learned
- Baseline characteristics vs. evaluation against requirements
 - Criteria review



“First Look” at BMWG Test

- Limited Characterization Study
 - Based on NSDD RID Test Methodology
- Baseline Characteristics of RID(s)
- Collect data and exercise methodology
- Limitations on time, instrumentation



Hand-Held



Shoulder Strap



Tripod



Conclusions

- Various Types of Testing
- Defining Criteria is Key
- Experience with
 - Data Collection
 - Characterization Tests
- Testing with Requirements Informs Decisions

Thermo RIIDEye-X-GN



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Thank you for your attention.
Questions?

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